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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,305	03/30/2004	Masahiro Shimada	63594.00002	1822

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EXAMINER

HOLMES, JUSTIN K

ART UNIT	PAPER NUMBER
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3681

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/812,305	SHIMADA, MASAHIRO	
	Examiner	Art Unit	
	Justin K. Holmes	3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Examiner acknowledges receipt of the Response Under 37 CFR 1.111 filed on July 5, 2006. Currently claims 1-6 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,123,884 to Kondoh et al. in view of U.S. Patent No. 3,681,242 to Murray et al.

The Kondoh et al. patent teaches a planetary speed changing device having an input shaft 21, externally toothed gears 25₁, 25₂ mounted on eccentric members 23₁, 23₂ having external teeth 27 with trochoidal teeth shape (column 4, lines 1-8), and an internally toothed gear 28 having arcuate teeth provided by outer pins 29 which engage the teeth of the externally toothed gears 25₁, 25₂. (column 4, lines 1-15). A space is formed between the externally toothed gears 25₁, 25₂ and the internally toothed gear 28 as shown in Fig. 2. The Kondoh et al. patent lacks a teaching of filling the space formed between the externally toothed gears 25₁, 25₂ and the internally toothed gear 28 with a grease which contains at least a base oil having a kinetic viscosity being not less than 10 mm²/s at 100 degrees C and an adipic acid based lithium complex thickener.

The Murray et al. patent teaches an adipic acid based lithium complex thickener having a lubricating base oil having a viscosity in the range of 7.55-64.72 mm²/s at 98.88 degrees F. The Examiner notes that it is known in the art that one (1) centistokes=SUS/4.635 and one (1) centistoke is equal to one (1) mm²/s. Further, that 210 degrees F converts to 98.88 degrees C. See column 2, lines 33-35. The grease has a lithium soap grease added as a thickening agent. A lithium complex as broadly recited in Claims 1 and 4 is defined as the various adipic based lithium soap mixtures disclosed in column 2, 16-56. It would have been obvious to one having ordinary skill in the art that the limitation in the claim that the 10 mm²/s at 100 degrees C would be satisfied by the viscosity of the Murray et al. patent at the lower temperature.

Accordingly, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the device disclosed in the Kondoh et al. patent and fill the space formed between the externally toothed gears 25₁, 25₂ and the internally toothed gear 28 with a grease which contains at least a base oil having a kinetic viscosity being not less than 10 mm²/s at 100 degrees C and an adipic based a lithium complex thickener as taught by the Murray et al. patent in order to provide a high temperature grease.

The Examiner takes Official Notice that it is well known by one skilled in the art to use grease between gears in order to reduce wear on parts and moving parts in industrial machines and cars.

4. Claims 2, 3, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,123,884 to Kondoh et al. in view of U.S. Patent No. 3,681,242 to

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Murray et al. as applied to claims 1 and 4 above, and further in view of U.S. Patent No. 4,749,502 to Alexander et al.

The Kondoh et al. and the Murray et al. patent lack a teaching that that base oil has a kinetic viscosity not less than $50 \text{ mm}^2/\text{s}$ at 40 degrees C or that it is not less than $100 \text{ mm}^2/\text{s}$ at 40 degrees C

The Alexander et al. patent teaches a grease having a base oil having a major component with a kinetic viscosity at 40 degrees C of at least 50 centistokes and more preferably at least 100 centistokes. The Examiner notes that it is known in the art that one (1) centistoke is equal to one (1) mm^2/s . See column 2, lines 49-55. The grease is an adipic based lithium complex of fatty acids added as a thickening agent. A lithium complex as broadly recited in Claims 1 and 4 is defined as the various lithium soap mixtures including azelaic acid which is an adipic acid as disclosed in column 2, lines 61-69; column 4, lines 18-35.

Accordingly, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the Kondoh et al. and Murray et al. patents and fill the space formed between the externally toothed gears 25₁, 25₂ and the internally toothed gear 28 with a grease which contains at least a base oil having a kinetic viscosity being not less than $50 \text{ mm}^2/\text{s}$ at 40 degrees C and more preferably at least $100 \text{ mm}^2/\text{s}$ at 40 degrees C and an adipic acid based lithium complex thickener as taught by the Alexander et al. patent.

The Examiner takes Official Notice that it is well known by one skilled in the art to use grease between gears in order to reduce wear on parts and moving parts in

industrial machines and cars as stated in the Alexander et al. patent. See column 1, lines 5-20 of the Alexander et al. patent.

Response to Arguments

5. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 4,435,299 to Carley et al.; and U.S. Patent No. 6,239,085 to Slack both disclose adipic acid based lithium complex greases.

Japanese Patent No. JP04160238A to Miura et al. teaches using grease in between an external and internal gear of an eccentric gearing system.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Facsimile Transmission

Submission of your response by facsimile transmission is encouraged. Group 3600's facsimile number is (571) 273-8300. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on _____ (Date)

Art Unit: 3681

Typed or printed name of person signing this certificate:

(Signature)


If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin K. Holmes whose telephone number is (571) 272-5930. The examiner can normally be reached on 8:00am to 4:30pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on (571) 272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JKH
9/14/06


CHARLES A. MARMUH
SUPERVISORY PATENT EXAMINER
ART UNIT 3681